

CLAIMS

1. A tool holder for a hand supported impacting machine, which tool holder is suitable for receiving a tool having a shank portion on which is formed a retaining collar, the tool holder comprising:

a tubular main body for receiving the tool, and

a locking element moveably mounted with respect to the main body, the locking element including an engaging portion moveable between a radially inner locked position, in which the engaging portion is engageable with the retaining collar of the tool, and a radially outer unlocked position, which enables a tool to be inserted into or removed from the main body; and

a manually actuable sleeve which is mounted around the main body so as to be moveable between a first position in which the engaging portion of the locking element is held in the locked position and a second position in which the engaging portion of the locking element is moveable to the unlocked position.

2. A tool holder according to claim 1 wherein the manually actuable sleeve is axially slideably mounted along the main body.

3. A tool holder according to claim 1 and further comprising:

a retaining ring axially slideably mounted with respect to the main body; and

a spring member that axially biases the retaining ring into engagement with the locking element so as to bias the locking element engaging portion into the locked position.

4. A tool holder according to claim 1 and further comprising a spring member that biases the manually actuable sleeve into the first position.

5. A tool holder according to claim 1 and further comprising a second locking element.

6. A tool holder according to claim 3 wherein the retaining ring is located rearwardly of the locking element and the spring member axially biases the retaining ring in the forwards direction.
7. A tool holder according to claim 3 wherein the axial movement of the retaining ring is independent of the movement of the manually actuable sleeve.
8. A tool holder according to claim 2 wherein the locking element is axially elongated and is pivotally mounted on the main body so that the engaging portion is radially movable with respect to the main body between the locked position and the unlocked position.
9. A tool holder according to claim 8 wherein the main body defines a recess and the locking element includes a radially inwardly projecting portion engageable with the recess on the main body so as to facilitate pivoting of the locking element.
10. A tool holder according to claim 9 wherein the main body includes a radially outward projection and the locking element includes a radially inwardly facing recess, and the locking element recess is engageable with the projection on the main body so as to facilitate pivoting of the locking element.
11. A tool holder according to claim 8 wherein the locking element includes a rearward portion and a forward portion, the rearward portion is pivotally mounted on the main body and the engaging portion is located on the forward portion.
12. A tool holder according to claim 8 wherein the locking element includes a radially outward portion and the manually actuable sleeve includes a radially inward locking member and when the manually actuable sleeve is in the first position then the locking member is engageable with the radially outward portion of the locking element to hold the engaging portion of the locking element in the locked position.
13. A tool holder according to claim 12 wherein the locking element includes a reduced external diameter portion and when the manually actuable sleeve is in the second position then the locking member is located radially outward of the reduced external diameter portion of the locking element.

14. A tool holder according to claim 12 wherein when the manually actuable sleeve is in the second position, then the locking member is located one of axially forward and axially rearward of the locking element.

15. A tool holder according to claim 3 wherein the locking element includes a first end and is pivotally mounted on the main body about the first end so that the engaging portion is radially movable with respect to the main body between the locked position and the unlocked position, and the retaining ring defines a recess, and the first end of the locking element is receivable in the recess so as to guide the pivoting of the locking element

16. A tool holder according to claim 5 wherein the locking element and the second locking element are pivotally mounted on the main body and, when the engaging portions are in the locked position, the locking element and second locking element together form a sleeve which surrounds the tool inserted within the main body.

17. A tool holder according to claim 8 wherein a forward end of the locking element extends forwardly of a forward end of the main body.

18. A tool holder according to claim 17 wherein the locking element includes a rearward portion and a forward portion, the rearward portion is pivotally mounted on the main body and the engaging portion is located on the forward portion.

19. A tool holder according to claim 16 wherein the locking element and second locking element both include a resilient ring portion mounted at a forward end of each locking element, and in the locked position of the engaging portions of the locking elements the ring portions together form a resilient nose ring.

20. A tool holder according to claim 8 wherein the main body defines a radial through hole, and the locking element has a radially inwardly extending engaging portion extendable through the through hole.

21. A tool holder according to claim 20 wherein the through hole is axially longer than the engaging portion of the locking element.

22. A tool holder according to claim 20 and further comprising:
- a retaining ring axially slideably mounted around the main body rearward of the locking element;
 - a spring member for forwardly biasing the retaining ring into engagement with the locking element; and
 - wherein the locking element is axially slideably mounted on the main body.
23. A tool holder according to claim 22 wherein the manually actuatable sleeve member includes a locking member located within the manually actuatable sleeve and in the locked position of the sleeve the locking member engages a radially outward portion of the locking element to hold the engaging portion of the locking element in the locked position, and wherein the retaining collar of a tool inserted into the main body is engageable with the locking element so as to push the locking element to a rearward position against the force exerted by the forward biased retaining ring.
24. A tool holder according to claim 23 wherein the rearward position of the locking element is rearward of the locking member, and in the rearward position of the locking element the engaging portion of the locking element is moveable to the unlocked position.
25. A tool holder according to claim 22 wherein the main body includes an outer surface and the outer surface defines a recess and a slot extending axially rearwardly from the recess, and wherein the locking element is axially slideably guided in the slot and pivotable in the recess.
26. A tool holder according to claim 1 and further comprising
- a retaining ring axially slideably mounted with respect to the main body to a first axial side of the locking element; and
 - an actuator ring axially slideably mounted with respect to the main body to a second axial side of the locking element opposite to the first axial side; and
 - wherein the locking element is radially shiftably mounted between the retaining ring and the actuator ring so as to be able to move the engaging portion of the locking element between the locked position and the unlocked position.

27. A tool holder according to claim 26 and further comprising a spring member and wherein the retaining ring is axially biased by the spring member into engagement with the locking element so as to bias the locking element into the locked position.

28. A tool holder according to claim 26 wherein the retaining ring, the locking element, and the actuator ring comprise a sub-assembly, which sub-assembly is axially slideably mounted within the main body.

29. A tool holder according to claim 28 and further comprising an actuator body located within the manually actuable sleeve, and wherein the actuator body is engageable with the actuator ring, so that as the manually actuable sleeve is moved from the first position to the second position the actuator body moves the sub-assembly between a first axial position, in which the engaging portion of the locking element is held in the locked position, and a second axial position, in which the engaging portion of the locking element is movable to the unlocked position.

30. A tool holder according to claim 29 wherein in the first axial position of the sub-assembly a reduced internal diameter portion of the main body is located radially outwardly of and engages the locking element to hold the engaging portion of the locking element in the locked position; and in the second axial position of the sub-assembly an increased internal diameter portion of the main body is located radially outwardly of the locking element so as to enable the engaging portions of the locking element to move radially outwardly into the unlocked position.

31. A tool holder according to claim 29 wherein the main body defines a radial hole, and the actuator body extends through the radial hole to engage the actuator ring.

32. A tool holder according to claim 27 wherein on insertion of a tool including a collar within the main body the tool collar engages the locking element to move the locking element axially against the biasing force of the retaining sleeve, so as to enable fitment of the tool within the tool holder.

33. A hand supported impacting machine comprising a hammering mechanism and a tool0 tool, the tool holder is suitable for receiving a tool having a shank portion including a retaining collar, and wherein the tool holder comprises:

a tubular main body for receiving the tool, and

a locking element moveably mounted with respect to the main body, the locking element including an engaging portion moveable between a radially inner locked position, in which the engaging portion is engageable with the retaining collar of the tool, and a radially outer unlocked position, which enables a tool to be inserted into or removed from the main body; and

a manually actuable sleeve which is mounted around the main body so as to be moveable between a first position, in which the engaging portion of the locking element is held in the locked position, and a second position, in which the engaging portion of the locking element is moveable to the unlocked position.